



# Using online journals to stimulate reflective thinking

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Information Systems or Electronic Commerce students can take HTX212 in their bachelor's program, or HTX512 in their graduate diploma and master's programs. These are combined into one face to face unit, supported by the use of WebCT, and consolidated by a three person team project, where students attempt to incorporate the features of client-side and server-side Web programming and database management which they have been taught. Other aims of the unit are to consolidate core skills learnt in other units; particularly project management, and to develop the use of reflective thinking for process improvement.

This paper describes a partially successful attempt to stimulate private communication from students with their lecturers through the use of structured questions in a WebCT journal. Having discussed the techniques used, and examined the student responses to the questions posed, the paper concludes by suggesting improvements for the future. The weekly journal requirement from each student to audit their and their team's performance allowed each individual to share concerns with their lecturers, analyse where processes were not working, suggest and monitor the effect of improvements. The quality of student response improved throughout the semester, with some deep discussion of issues, although many students struggled with the concept initially. Discussions were promoted on the bulletin board.

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## Introduction

HTX212 is chronologically the middle one of three hypertext units (HTX211, HTX212 and HTX312), which comprise the electronic documentation stream offered to IS majors in the Curtin Business School. Postgraduate versions of these units are taught in the same classes, with higher expectations of the postgraduates.

With the objectives of integrating multimedia objects and interactive functionality into hypertext documents, undergraduate/postgraduate students are required to develop an interactive Web site suitable for use by customers of a small business enterprise. Students are expected to make a significant contribution to the team based product by consolidating client-side and server-side programming and database management concepts taught previously in this unit. They are also asked to bring to bear their reflective thinking skills discovered during this unit.

Students are marked on their:

- significant contribution to and participation in the development of a team based interactive

Web site;

- significant contribution to and participation in a work in progress presentation during the project, and
- on going critical analysis of the processes used by the individual and the team.

The unit (HTX212/512) combines face to face teaching with project work and independent journal contributions. WebCT is used to host the teaching resources, bulletin board, chat room and project work. The journals are also submitted through WebCT, but in this case, access is restricted to the individual student and their lecturer(s).

The unit has captured some characteristics of distance education, in the sense that WebCT has added value by providing additional communication channels with students and lecturers. The use of the Bulletin Board has been quite extensive: students share problems. Email also features as a one to one and one to many problem solving mechanism. However, the focus of this paper is to be on the use of the WebCT journals to stimulate reflective thinking leading to process improvement.

## **Background/historical development of the unit**

The hypertext units (of which there are now three: HTX211, HTX212 and HTX312) comprise the electronic documentation stream offered to IS majors in the Curtin Business School. The initial unit HTX211 is also available as a University wide elective and is a prerequisite for HTX212.

The objective of HTX211 is to provide students with an opportunity to discover hypertext as an alternative to linear paper based documents. In deconstructing a text based document in order to constructing hypertexts from it, students learn how to evaluate hypertexts for usability and functionality.

Based on this, HTX212 provides students with an opportunity to incorporate multimedia objects and interactivity into a web site suitable for use by customers of a small business enterprise. To achieve this, the students are required to develop some familiarity with scripts, forms and database back end processing.

The third unit (HTX312) considers electronic publishing systems and libraries.

HTX211 and 511 were designed by Heinz Dreher in the early 1990s. As hypertext was such a new idea to most of the staff In the School of Information Systems there was considerable resistance to the introduction of the hypertext units. To ameliorate this, since a large part of making a hypertext is 'processing' text from its linear structure into heterarchies, the pseudonym of "text processing" was used initially.

Student numbers at first were quite modest, but it did not take long for the word to spread that there were some exciting and useful opportunities for students knowledgeable in hypertext. From mid-1994, with the arrival of the WWW on our campus, numerous other units were introduced relating to the Web and the Internet. The hypertext units began to use HTML as the hypertext language, whereas a variety of other languages and systems had been employed in the early years. Word of mouth and brochure distribution contributed to the popularity of the units during the late 1990s.

## **WebCT opportunity**

Online components of the course consisted of journals, presentation feedback and open discussion. The online journals were implemented within a WebCT environment at Curtin University of Technology, using the standard quiz tools it provides. Each week, a quiz containing only two or three questions was made available to students. Using the access restriction features of WebCT quizzes, these could only be used in the assigned week from one lecture to the next, which

encouraged students do a little work each week. The questions consisted of one or two long answer questions for the journal itself, as well as one multiple choice question. The long answers were guided by open ended questions that the lecturers composed each week to stimulate particular directions of thought. A multiple choice question was used to take quick polls, or survey student progress in different ways.

Additional custom software was developed (within the WebCT server) to manage the more complicated feedback during the five weeks of group presentations. Students were identified by their WebCT username and so this software could function in a customised way for each student. For this application, web based CGI programs collected feedback (comments and grades) from all students for each group presentation. The feedback was saved in a MySQL database. CGI programs were added to facilitate the use of the database as follows:

- students were able to view all the feedback collated by group, and each comment was made anonymous;
- teachers were able to view all the feedback grouped by student, and a form allowed the teachers to easily grade the feedback for each student, each week; and
- students were able to view a results page where they could see their collected feedback and the grade given by the teachers.

Lastly, online discussion was supported using standard modules of WebCT, including the bulletin board and mail modules.

## Course structure

The journals were only analysed for the first 7 weeks as their purpose changed thereafter, as shown below.

Week No.	In class activities	Online activity
1-7	Lectures, Project work	Online Journals
8-12	Work in progress presentations, Project work	Online Critiques of Work in progress presentations
13-14	Project work	Bulletin Board Critiques of Projects, online Feedback on the course

## Theoretical background

Some publications on meta-cognition and reflective learning have been very helpful in the design of this unit, from a reflective thinking perspective. Laurillard (1993) describes reflective learning as requiring meta-level monitoring by the subject. She uses the word 'mathemagenic' which, coined by Rothkopf (1970), describes activities which give birth to learning; and reminds us that an insight into what constitutes the learning process can suggest the basis for a teaching strategy:

"the teacher must support the process in which students link the feedback on their actions to the topic goal for every level of description within the topic structure"

Laurillard (1993) also recommends invoking the phenomenographic method, which sets out to describe

"not what is known about x, ... but how the idea of x can be experienced"

Marton, Hounsell & Entwistle (1984), proponents of Phenomenonography, are concerned with collecting data directly from learners through self reports and interviews on their experience of learning. The teacher is seeking to understand the phenomenon of learning by asking the student questions designed to promote the student's meta-cognitive awareness. Their replies are analysed from a teacher's perspective in order to identify how teaching and assessment affect quality of learning.

The difficulty of selecting meaningful open ended questions is addressed by Brockbank & McGill (1998) who suggest that teachers begin by self reflection with questions such as:

- What do you want to achieve?
- How will you know if ... ?
- How can you make it happen?
- How do you feel about ... ?
- What could you do ... ?
- What do you think would happen if ... ?
- What would help?
- What would get in the way?

Having experienced, modified and fine tuned this approach, a model of the process by which reflective dialogue can be facilitated to encourage critical reflective learning is then offered to their students.

Biggs & Moore (1993) point out that learners who are aware of their meta-cognitive processes carry out complex activities by

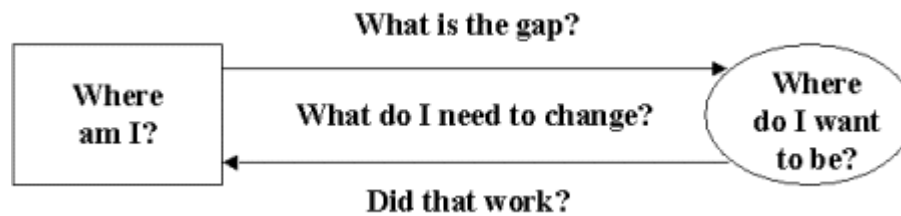
- *planning*, deciding what their goals are and what
- *strategies* to use to get there; decide what further
- *knowledge* or resources they need;
- *monitoring* progress along the way; (am I going in the right direction?);
- *evaluating* when I have arrived; and
- *terminating* when the goals have been met.

Houssman (1991) (cited in Gordon (1996)), found that students who were aware of their own meta-cognitive processes and monitored their own learning processes became more proficient learners in a computer class, compared to those who did not. This is particularly applicable to group project activities. The Newell & Simon (1972) General Problem Solver (GPS) provided a problem solving process based upon a meta-cognitive approach and using a means-end analysis as follows:

- Identify the goal or target
- Measure the gap between the source and the target
- Apply an action or operator to the source

### **A model for using reflective thinking for process improvement**

Figure 1 outlines a model for using reflective thinking for process improvement, based upon the Newell & Simon (1972) GPS, which was introduced early in a teaching situation.



**Figure 1:** A model for reflective thinking for process improvement.

Our philosophy in structuring the online activities was that students should benefit from their own experiences. We aimed to choose a metacognitive approach when setting the journal questions, so that students could construct and express their own understandings of the process they were experiencing. While it was intended that there be some use of the bulletin board as a mechanism for solving specific technical problems, we wanted students to discuss and reflect on *process* issues in project management with us. We also wanted an iterative procedure for providing our feedback to them on their reflections.

### Allocation of marks

Each week 4 marks were available for journal entries. Some questions did not attract any marks (eg. Week 4 Question 1, and Week 6 Question 2). The marks were allocated in response to a description of process rather than a list of content.

### Weekly journals

The number of questions and format varied, sometimes leading in with a Biggs & Moore (1993) multiple choice question (see Week 4 Question 1) intended as scaffolding to prompt the student. The reflective question was formulated in the Brockbank & McGill (1998) style (see earlier). Sometimes a final feedback question was appended to give the student a chance to comment on other issues, eg. *Any questions you want to ask, or issues you want to raise?* (Week & Question 2).

### Sample questions

#### Week 2:

It's now been over a week since you started the course. By now you should have at least some idea what your project will be. Below,

- write a short description of your project (as much as you know);
- what aspects do you think will be most difficult?
- what aspects do you think will be easiest?

Has your group met yet? Working in groups isn't always easy, and developing your interpersonal skills is part of this unit. Share any problems you've had forming, defining roles and dividing workload.

#### Week 3:

How is your project going? What is it like working with the other members in your team? Have you met with them yet? Are there any problems appearing? What new ideas have you come up with this week? What ideas have you rejected this week? If you are having problems, what are you doing to solve them?

#### Week 4:

1. Which of the following things have your group worked on so far?

- ☐ 1. Functional requirements
- ☐ 2. Operational design
- ☐ 3. Scope
- ☐ 4. Site structure
- ☐ 5. Task identification, resource allocation, and time estimates
- ☐ 6. Web content (text, graphics etc)
- ☐ 7. Web design (HTML, Javascript, CGI programs etc)
- ☐ 8. Preparing for work in progress presentation

2. Thinking about the sections outlined in question 1, write your observations about how your group went about developing them. If you are having problems, what are you doing to solve them?

*Week 5:*






It's week 5, and the semester is slipping away quickly. Is your group becoming focused on the tasks you need to do? Do you think you'll have time to finish the project as you'd intended? If so, what are you working on? If not, what can you do?

*Week 6:*

- o Week 6 - mini-checkpoint/revue (be your own auditor). How is the group working together at this point, from your perspective (issues/problems/successes)? What are you personally working on at the moment? Is anything blocking your progress? If so, how will you try to overcome it?
- o This unit this semester has been fairly wide ranging across all aspects of designing and building a web site. For future versions of this unit, do you have any feelings on how the focus might be improved? (If you think it shouldn't change - don't tick anything)

- ☐ 1. More focus on HTML
- ☐ 2. More focus on databases and programming
- ☐ 3. More focus on user interactivity
- ☐ 4. More focus on web design
- ☐ 5. More focus on project management

The results of which were analysed as follows.

Answer	Value	Cumulative Frequency Distribution	
1	20%	19	
2	20%	26	
3	20%	27	
4	20%	23	
5	20%	7	

*Week 7:*

How is the group working together at this point, from your perspective (issues/problems/successes)? How are you personally feeling about the project at the moment? Is anything blocking your

progress? If so, how will you try to overcome it?

### Lecturer roles

This unit was team-taught. One lecturer specialised in pedagogical process (project management, presentation skills, group interactions). The other lecturer brought very high quality technical skills and knowledge of using technology in technology education.

### Statistics of use

Demographics	Week 2 to Week 7					
Number of students	44	48	52	52	52	52
Number contributing each week	42	47	48	50	43	48

### Use of collected data

All collected feedback and corresponding marks were stored in online databases. Programs (in WebCT or custom written) were used by the lecturers as follows:

1. To produce statistics and matrix displays to identify problematic journal questions, or trends in individual students. For example, a student whose marks were steadily decreasing was contacted to find out what was going wrong.
2. Feedback on student presentations could be collated and given back to the presenters, so that they could reflect on the reflections of their peers.
3. To answer ad-hoc questions that occurred to lecturers throughout the course. For example, "How are the postgraduate students performing in relation to the undergraduate students in the same course? "

### Journal entries

Issues for both students and lecturers were identified in the following categories:

- Journal use
  - Positive and negative student reactions were seen
  - Style often (possibly deliberately) used informal grammar and spelling
  - Content was sometimes confused with process in critical analysis
- Team interactions
  - Knowledge of individual strengths and weaknesses was displayed
  - There was some anticipation of trouble ahead
  - Realistic remediation strategies were proposed
- Project management
  - Organisation (or lack of) was evinced
  - Time (mis-)management was evident
  - Use of the PM process and tools was stated
  - A need for contingency planning was seen as the term progressed
- Problem solving
  - Plenty of problems were identified, but remediation strategies were not always offered

- Motherhood statements there were a-plenty
- The benefit of communication was appreciated
- The importance of reaching consensus was underlined
- A lack of process was often apparent
- There was positive use of feedback from the work in progress sessions
- Learning experiences
  - An opportunity to experiment with many of the web tools available was relished
  - Teams understood the focus to be on working as a group and the process of learning, rather than the end product (project)
  - The process of cross fertilisation was discovered, in that the group assess the work of each individual member, while the individual gives each of them feedback on the work they are doing to achieve consistency
  - The knowledge gained from this unit will allow the student to work with designers and clients and will be able to understand the technical side as well as the business side of Electronic Commerce

The following sections illustrate various types of student-lecturer interactions through edited extracts from journal contributions. Names of students and project references have been altered to preserve anonymity.

### **Journal use**

I kinda like this journal as well, I wish my previous units has something like this, and one thing I really feel good about it is that it is personal, so that I can speak of my problem clearly (luckily I don't have to this time), if some of my other units have this tool, it would really help

I am begining to get a bit sick of this journal exercise. I think perhaps a fortnightly entry may be more "bearable". While it is a good way to keep groups in perspective as it acts a bit like a "reality check" along the way but seriously, do we have to rack our (perhaps deepest, darkest) feelings once a week to "earn" our 20% at the end of the semester? I'd rather spend a week learning a new tool, say, java script or html than reporting about nothing but group dynamics. The first 3 weeks were fine but after that, its a DREADFUL exercise to attempt each week.

### **Team interaction**

there were a lot of problems in forming our group. Firstly, as I did not know A. very well, it was really very, very painful and difficult to establish a group with him. I had to spend about 30min to talk to him in order to get knowing him. Secondly, since A. is not very interested in soccer unlike B. and I, it was really hard to convince him about our ideas. I had to spend 45min of the last lab to explain to him about our ideas. I virtually had to explain every single detail of our ideas to him in order to make him understand what our ideas are about. In the end, I got to know A. quite well. He seems to be a very good web designer. So he would be able to help us a lot I think.

I do personally sense a bit of initial unease from one of my team mates as he is an undergraduate and the rest of us are postgrad students.

There seems to be a lack of communication between me and the group

### **Project management**

I enjoy being the "project manager" of a team very much as I tend to have this knack to look at



things at a macro view. I tend to approach projects with a "goal oriented" perspective, rather than "task orientated". Therefore, I became pretty good in observing the different talents within each individual, organizing and basically facilitating communication within a group.

Firstly, we divided our work into three main groups. They are project manager, project designer and programmer to develop this project. Then we spread these jobs among three of us.

Throughout this project, we've identified our task allocation and time estimation so that other assignments do not clash with other kinds of assignments.

Continuous review of the project has meant that these guidelines have had to be modified to reflect changes in opinions, preference, level of skills or experience required to complete certain tasks. Although the Project Management Scaffold is seeing changes we are trying to ensure that we do not extend the scope of our project which would in turn blow out our time estimates for completion.

### **Problem solving**

we can help each other to solve problems that happen in the project and can give some ideas for project. I think it might be better than do it alone

the "attitude" we adopt as a group is "look before we leap". This means that, we assess the various options, minimize any probable problems and go full steam ahead, while adapting as we go

### **Learning experiences**

I believe one of the best aspect of working for this unit is that if it does not work out this time, its awright. We have the opportunity to doodle and play with many of the web tools that are available AND, more importantly, gather first hand learning experiences.

In this project we focus on how we work as a group and the process of learning what we don't know rather than just focus on the end product (project).

While combining the work, we sort of cross-work in the sense that they would be assessing the work I have done, while I give them suggestion on the work they are doing in order to be consistent with the rest.

In this unit, we are not aiming for the end product, instead, we are learning the progress.

I cant be a designer BUT the knowledge that I have gained from this unit will allow me to work with designers and clients as I will be able to understand the technical side as well as the business side of Electronic Commerce.

### **Improvements to be made**

It would be interesting to ask the students to suggest questions to prompt reflective thinking in their journals.

It would also be useful to provide an additional opportunity to reflect on the unit objectives for relevance, at the end of the semester, since the responses to Week 6 Question 2 indicated that more practical teaching would benefit this unit. (The students wanted to improve their skills in

programming, data base connectivity and web design, directed towards the evolving electronic commerce requirements of marketing, management and business in general.)

## Summary

The journal participation rate was high, to be expected, since there were marks for the journal entries.

The quality of student response improved throughout the semester, as did their spelling, punctuation and grammar.

The lecturers' optimism was justified that some learning experiences had been assisted by the use of journals.

The students also made use of journals to share concerns with their lecturers, and to a limited extent to analyse where processes were not working and to suggest improvements. However there was little or no monitoring of the effect of suggested improvements. Perhaps this should be reinforced in tutorials, or on the bulletin board?

We were left with the following unanswered questions:

- Is more research into motivation and affect of open ended questions needed?
- Are we/should we be including reflective thinking techniques as a professional improvement process in all units?
- How can we measure success?

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## Appendix 1 - Suggestions for improvement

is it possible to set up a server or database in CBS?

can you taught something more about Active Server Pages in the lecture or lab session. Furthermore, I think most of us are familiar with HTML and some Webpage Editors. So, I wish we can learn something more advanced and contribute to our career like what is the true mechanism of an interactive website, what kind of script and software to be used? MS Personal Web Server, MS Visual InterDev, VBScript, ActiveX .... everything about a truely commercial and professional like website

It would be appropriate if there was a BREAK in each session as it can be very difficult to absorb during the whole two hour lectures.

there is no user requirement for the project, thus we have to come up with our own requirement which is pretty tedious. It will be much better if a list of objective is being given instead of coming up with our own objective.

Maybe curtin lab could provide us with a web design application, such as HTML or dreamweaver. Since they are not freeware. We can download dreamweaver of the internet but they are only for 30 days trial. I am sure that there will be a lot of people at curtin to use it. It's just a suggestion.

This unit is quitye challenging for pc novices. if web publishing tools were available in the lab, such as dreamweaver, photoshop, java editor, flashing tools, that will be great, because that will faciliate and speed up our learning curve.

You might want to delay the formation of groups till the 3rd week as many students tend to "shop around" for units.

## **Appendix 2 - Week 2 responses**

*What aspects do you think will be most difficult?*

One answer covered all bases:

how to manage the data which will provide information of our business as the database. - what kind of program that we want to use for sorting the data. - how to connect our database to website. - planning the project, locate tasks for members

Most answers identified individual experience or known weakness:

Communication skills between members

Coming to an agreement when project members each have a different viewpoint

Working under pressure - probabaly towards the end of the project

the coding as i know nuts about HTML, CGI or Pearl but i a,m willing to learn the easist will be talking about it i suppose

(actually I prefer the word "difficult" not "most difficult", because I think it's only a matter whether a person is willing to put some effort in it to make this project not that difficult), is probably the implementation of the database part

when customers need to change their arrangement details where this feature has to be available over the the website

developing the electronic docket and creating cookies

defining what kind of clients are targeted and their possible requirements

coordination between group member, resolve conflict among group members, organising and allocating task

creating the database and do a dynamic web design

database integration, the logins, chat rooms and bulletin boards and the graphical design itself.

Coming up with a uniform site design will take some negotiation to come to a group consensus

Personally, the technical aspect of the web site will be difficult for me as I do not have a good knowledge on HTML

trying to work with people with business perspectives

*What aspects do you think will be easiest?*

Most people picked out their own strengths:

basic function such as, form filling, sound and animation

Creating a project plan

the physical design of the website (graphics and layout), since I am the graphic designer in this group

the interpersonal aspect of the project, working together as a team

Some were just optimistic:

working as a group, because we can divide the workload into three parts and then exchange the information

Creating the written content and graphics etc as this will be determined by the client - brochures, marketing materials etc.

no serious problems provided we have the TIME to implement

*Share any problems you've had forming, defining roles and dividing workload*

Some answers were predictive

working in group is not easy because any one has their own ideas and different point of views

Working in groups isn't always easy. I am telling this because, i got experience in working in a group to complete a project. Sometimes, when we choose a wrong group, we really need to suffer a lot.

Although there are disadvantage by doing assignment in group, at the same time, we also can develop our interpersonal skills and we also can learn many things from our groupmates

I foresee problems such as time clash for meetings, work distribution to come

Some experiential

Our group has met twice so far and at present I think that we are getting to know each other. We have not defined a project manager or a team leader at this stage.

the other two members are more interested in the marketing

Workload has not really been defined yet

As my experience, working on the group is not easy, but I still try my best to do the negotiate with my group members.

A few, clearly concerned

Working in groups, no doubt is easy to distribute the work, but none of us have any experience in this unit.

one of our group mate suddenly withdrew from this unit and we are now still looking for a group mate.

It is only during the course of the semester that the true colors of the group members starts revealing. Some would have a three layer brick, or the most thickest skull that is so hard to penetrate

group members tend to rebut on your main issues, which on the other hand seems logical to the units that we are doing

There seems to be a lack of communication between me and the group

We have not discuss the details of this site in depth (e.g what functionality we want for this site, the presentational outlook, who will attempt to do what, the role we play, etc ..). This is a bit of a worry to me. At present, we are all brainstorming ideas and checking out other related sites

Then there were the stars

we have delegated our tasks and we have the designer, programmer and project manager

In order to keep ourselves posted as to what we have been doing throughout the week before we meet on Tuesdays....we communicate via email and ICQ

We always give ourselves work to do before we meet for the next meeting, by this we collect information and do our part in our spare time. We also give one another email address and phone, in case we need to contact each other urgently when we are lost in doing the project. We try to understand each one of the group and give the best of our knowledge to complete this project.

When we define roles and divide the workload, everybody agrees. We share and try to solve every problem we have, that's why until now we don't have any big problem at all.

we are tasking ourselves with weekly milestones to strive towards

I enjoy being the "project manager" of a team very much as I tend to have this knack to look at things at a macro view. I tend to approach projects with a "goal oriented" perspective, rather than "task orientated". Therefore, I became pretty good in observing the different talents within each individual, organizing and basically facilitating communication within a group.

The over confident

I envisage that the group will work well together and I foresee no major conflicts in the completion of the project.

we don't need any roles in this group because we work as a team

And those flying trouble flags

The majority of the problem is a small language barrier and the fact that I have worked on high level sites, as management and as 'staff', so in this case I am waiting to see what role i am assigned, as management or as a staffer.

there were a lot of problems in forming our group. Firstly, as I did not know A. very well, it was really very, very painful and difficult to establish a group with him. I had to spend about 30min to talk to him in order to get knowing him. Secondly, since A. is not very interested in soccer unlike B. and I, it was really hard to convince him about our ideas. I had to spend 45min of the last lab to explain to him about our ideas. I virtually had to explain every single detail of our ideas to him in order to make him understand what our ideas are about. In the end, I got to know A. quite well. He seems to be a very good web designer. So he would be able to help us a lot I think.

I do personally sense a bit of initial unease from one of my team mates as he is an undergraduate and the rest of us are postgrad students.

We have a very unique situation concerning our group. 2 of us are from 512 and the other group member is from 212. I was a little apprehensive because he was an undergrad and was only expected to perform at an average 50%, and I have never worked with the other group mate before. But after having talked about it, we made it very clear that we expected no less than 70% from the group.

### **Appendix 3 - Week 3 responses**

Reflect on your experiences of the past week. How is your project going? What is it like working with the other members in your team? Have you met with them yet? Are there any problems appearing? What new ideas have you come up with this week? What ideas have you rejected this week? If you are having problems, what are you doing to solve them? (Remember, these journals are confidential between you and the lecturers)

Group dynamics.

Communication and collaboration is enabled via email correspondences as well as face to face meetings (currently twice weekly).

We are wondering how would it be possible to collaborate in the designing of the website. Should someone be in charge of design, or should the entire "site" be broken down into tasks of which each of us are given a piece to handle?

The situation with our group is unique because we have an undergraduate as a team member. I

feel that he is not putting in his worth even though what we expect from him has been put across. Maybe he's just embarrassed working with us so we will try and draw some suggestions out of him.

the only major obstacle I guess it would be the matching of our time to meet outside the class, we have different timetables ... We're generating ideas, and at this point we've getting a more clear information of the scope of the project

I have some concern about the scheduling of group meetings due to other uni and work commitments

The group meeting is failed in the prac this week, since one of our member is not here

A few problem have strike me during the past week; the group I am in seems to have a very strong business oriented idea .. For example, they was considering to make a property sales homepage; where will let user to pick the right colour / wallpaper combinations they want. But I believe you also know how much java code only that part will required. Although the girl and I both want to make this project fun, I suspect the final topic may not be in our way. Probably that's all my assumption ... and I hope that it is.

Task have been allocated. I get the wonderful job of doing everything. Except gathering content. That's the trouble with having done all this stuff before. Oh well, At least I get the design/interface decision

We are still not very clear in the project develop. We now try to having a set of clear working list - the tasks that we want to achieve to do the web page... Working in the group is not easy as each one of us come from different countries. However, we are respecting each other and try to work out a common set of working environment and objectives to finish the tasks or project assigned... Time is the major factor for the project

several new issues have been added and required to be focused and they are: [On Social Side] - How to polish up each member's skill? - How to fully explore each member's talents? - How to build up an efficient and effective communication among group members? [On Technical Side] - Time management - Quality assurance - Design philosophy - Systems flowchart, workflow and hierarchy.

Initially, my members are thinking of creating this website as a cash generating tool. They were very enthusiastic and were going wild with ideas....weren't exactly down to earth. The reason why I said that is because they want to establish the site and sell it back in Singapore. From this point onwards the goal is very different. I just want to finish this project and get a grade and not thinking it as "business". Problems -

1. To really get this site functioning at a business level is very task demanding and we are not able to achieve it. But they insist on doing it, though none of us know how to go about. I have been trying to explain to them that it doesn't have to be a working site, until this week this message then got across. I am actually glad that the message got across.
2. For instance, choosing a name for the site. Until now the name is still not chosen. It is not that I didn't contribute, I suggested the name "TheMerchant.com.au" but they were not interested. They were thinking of "V-Mart". I have decided to let them come up with the name.
3. Guys are always guys. They love to drink beers and along the way discuss what ideas they have. I am not very comfortable with this drinking beer scenario. To me discussing work and doing documentation should be a bit formal, cause u need a clear head. By writing all these, I feel that I am complaining a lot.
4. We haven't tackle the coding side of things

5. I saw the layout of the homepage today but was not impress. I told them it looked like Curtin's website. Yellow tables (as background) all over the site. Changes to this layout will change in the coming week. I would like to do up a layout and show it to them. They can give constructive criticism and from there we see how it goes.

Complaints department.

the technology provided by curtin is very limited (much 'if X existed we'd do Y')

I feel that when working in group and design a website of this magnitude doesn't allow everyone to learn all the tasks required to create a website ... I took up this unit so that I can learn how to create website and all the tasks involved and put it into practice (e.g. learn coding, graphics put into use). Now I am isolated into doing a particular task ... It may be more appropriate that each individual do a website and practice what they learn.

Errr, I find that this whole thing is like typing an email to....err.....my lecturers, who might not reply me or 'enlighten' me. Will u??

I am starting to anticipate the fact that as we get further into the semester, we will have problems arranging groupwork out of the labs as all of us have pretty heavy workloads in terms of the number of assignments that we have to hand in with regards to our other units.

it is hard to manage time and make ourselves free in the same time

which tool/programming language to use, for there is no specification from the lecturer

## Appendix 4 - Week 4 responses

The purpose of the first question was to remind the groups of the project management methodology, i.e. provide some scaffolding. It was repeated each week from this point on, adding further project stages chronologically.

1. Which of the following things have your group worked on so far?

- ☐ 1. Functional requirements
- ☐ 2. Operational design
- ☐ 3. Scope
- ☐ 4. Site structure
- ☐ 5. Task identification, resource allocation, and time estimates
- ☐ 6. Web content (text, graphics etc)
- ☐ 7. Web design (HTML, Javascript, CGI programs etc)
- ☐ 8. Preparing for work in progress presentation

2. Thinking about the sections outlined in question 1, write your observations about how your group went about developing them. If you are having problems, what are you doing to solve them?

Some answers sounded a bit theoretical.

Once project viability has been established and a decision to proceed has been made, a detailed, written plan of execution for the project should be drawn up.



The definition of work scope, the establishment of interface conditions between project components, work scheduling and monitoring, data availability, design reviews and design liaison are some principle project activities.

Whereas some had made a determined start.

Firstly, we divided our work into three main groups. They are project manager, project designer and programmer to develop this project. Then we spread these jobs among three of us.

Communications are ongoing. If necessary, formal or informal meeting are held daily between members.

Throughout this project, we've identified our task allocation and time estimation so that other assignments do not clash with other kinds of assignments.

Based on the functional requirements, we started working on the functional design. The main question we asked ourselves was that what would be the best means to achieve these requirements, such as the use of interactive database, email, and chat facilities. We also have to think about credit card checking and how to securely transmit data. Next is to decide the scope of the project.

Some offered practical suggestions.

At first it's a bit difficult to get pain the picture on their mind but with the help of the prototype example, I was able to convince them on what I was talking about. To further understand the concept, we had a play on the prototype for a while before coming together again to discuss the details.

Before we came out with the site structure we discuss on the number of sections we going to have on the home page. Like a supermarket where there are signs to show customers which aisles contain the product that they want.

We came up with ER diagrams and alittle of DFD to illustrate to ourselves how the website flow within entities so that we can come up with the actual navigation tools on the website.

We intend to do up a template webpage so that we can all use the same template for consistency work

we will use dummy page to simulate a data entry to a database and explain what it will do.

If I have problems, I try to find helpful books and search useful information from the Internet to solve problems. If these problems are still unsolvable, I will communicate with my group members first, then ask other classmates, or directly ask lectures. If some of problems cannot solve, I will change my plans.

we search online site that are performing the same business objectives. From their site, we gather what functionality needs to be included in the site...From our research findings, we identify the critical functions that need exist on the site. Then we look into the site development at "skeleton level" - site map.

Some outlined problems which the lecturers needed to be aware of.

We have decided to use Dreamweaver to design our site and hence we cannot do much of the

implementation at university since uni doesn't even have Composer !!!

The only problem i'm having so far is getting the text book by Castro since the bookshop says it won't be in till the end of september, and all the bookshops in town are also in the process of ordering them.

the problem is that i don't have remote access at home so i've had to go to uni to look for information

we didn't join the class until the last day of enrolment and we sort of lost at the first place to, so at the moment we try to figure out which is the best way for us.

Some agonised, but managed to offer remedial strategies.

I really have problems in this unit. I wasn't know what I could do to design the home page. I tried many times and nothing turn up. I went to bookshop many times to ask for the text book which required for this unit, the staff keep telling me that the book is not in store yet and they can't promiss when I can get the book. I was so up sad about it. Until today, I asked my friends who know quite well about this unit. I told them my problems. They help me to solve my problems by telling me and showing me what to do, how to do. One of my friends even lent me a book about HTML, he told me that the book that he lent me is much better than the text book. I guess this will really help me a lot!!! I really afraid that I will not do well in this unit. I guess what I can do now is start from scretch. I'm learning how to use netscape composer so that I know how to insert all the picture and data to the page. I also continue to search info from the net which I need

Last week I was still worrying about getting the rest of the members to meet, so I decided to push them a little and told them how far we are behinf schedule, thus ended up meeting in the afternoon and back again in the night to prepare the site structural design. The site structure design was decided upon during the afternoon meeting. We also standardise a few things such as file names, menu, operations, etc. The only problem is that we still unable to decide on the operational requirements. I strongly feel that there is no need for a database, but a spreadsheet for calculation. There again, my fellow members thinks differently till I explained to them with examples.

designing the web page is difficult. I have to learn how the netscape composer function and operate. ... I try to look for the type of the specification i need for my page, but, i don't know how the netscape composer can do it. Fail. Try many times, fail!!! My group memebbers also have the same problems as me. ... What we decide to do is do whatever we can first. ... I try to get some books about the HTML to help me in designning the web page. I hope this will help. This unit has become tuff for me and a lots effort have to put in to make my work as i planned and achieved.

Some didn't offer much except motherhood statements.

Our group hasn't really done too much so far... I guess we have to focus more on the work at hand..and organise our time better.

Finally, unclassifiable, but irresistible.

One thing that we have not done is task identification, resource allocation and time estimates as, in my own personal opinion, there is no such thing on the guys' mind (sigh...).

## Appendix 5 - Week 5 responses

It's week 5, and the semester is slipping away quickly. Is your group becoming focussed on the tasks you need to do? Do you think you'll have time to finish the project as you'd intended? If so, what are you working on? If not, what can you do?

Now the realisation that time is getting short.

We have used a lot of time to do design our project, but it's still not finish yet...We do not really know well about stucture of web page and HTML as well.

I think our group members know what we need to do. However, we have a problem in how to do it, how to start?

our group met up and has worked on the project management scaffolding that was suggested as solution thru the last journal entry. It some how only define our scope, able to distribute some task, but still does not open up a path to show us clearly where we must go.. Here our group is still unsure of the operational design of the website. We are stil debating over the use of a database.

I'm searching the net to look for more materials regards the part that i responsible for like graphics, products details, etc. I try to draw the kind of the flow diagram that showing where the web pages are heading/linking each other as well as the entities and attributes involve. Still working on it!! I have to put harder on this subject as our group has target ourselves to achieve the goals we defined for our project. And, we hope we can meet the time range and tasks we decided for. Now, i'm afraid i have to make more discussion with group members not just twice a week, but three or more meeting and discussion a week. Is out of time now and the presentation is coming soon. Besides, we have other subjects to done and working as well. I must make sure that my group will make it.

it is taking more time than I estimated because of our lack of technical knowledge of HTML

As a group, we faced the difficulty of finding time and meet.

I don't think we have very much say in whether we can actually finish the job on time. It's a do or get roasted situation and I believe we have obligations to our group mates.

I think we had definately took a little too much time in sorting out our design component than expected.

Contingency plans.

If the project cannot finished on time that point to a significant change to the original plan. - Changes within the parts without damage to the rest of our schedule. -Allow more hours in the workday. -Reduce the overall project scope. -Instead of performing some tasks sequentially, one at a time, perform them at the same time, in parallel fashion. \_ Eliminate some subheading.

For those that is too hard or we are not sure on how to do them at the moment, we provide simpler alternative option to do

After I have finished the construction of prototype and my other group member have finished their database design. Then, we will come together and share knowledge on each individual's work. If necessary, we will have tuition on using different application like Macromedia Dreamweaver, Fireworks, Flash 4.0, MS Access etc. Regarding the CGI language - Perl, we will allocate different material from the [www.perl.com](http://www.perl.com) website. Moreover, we will again

discuss on what have been learnt from this site and work out all necessary program together

Continuous review of the project has meant that these guidelines have had to be modified to reflect changes in opinions, preference, level of skills or experience required to complete certain tasks. Although the Project Management Scaffold is seeing changes we are trying to ensure that we do not extend the scope of our project which would in turn blow out our time estimates for completion.

the "attitude" we adopt as a group is "look before we leap". This means that, we assess the various options, minimize any probable problems and go full steam ahead, while adapting as we go.

Positive progress.

we should be able to come out with the prototype by next group meeting

We have identified a couple of web sites that we believe have the image for the web site that we need to create so therefore we will be modelling our ideas on these existing sites.

What we went through again were the functional requirements, operational design and scope for the second time, this time following the project management template which has been given. As we were doing it, gray areas become clear when we contribute ideas and put them in the middle.

As for the Gantt Chart which will have the task identification, resource allocation and time estimates, we are going to do them today. I think we will have time to finish the assignment, or at least we will attempt everything in our functional requirements.

Not such a good idea.

since, only one of us will upload the HTMLs to the web site, each of us will try to create our own pages and email to each other and compare and take pieces and sections that is the best and assembly them

## Appendix 6- Week 6 responses

Week 6 - mini-checkpoint/revue (be your own auditor). How is the group working together at this point, from your perspective (issues/problems/successes)? What are you personally working on at the moment? Is anything blocking your progress? If so, how will you try to overcome it?

Problems still surfacing but in many cases, solutions being sought.

At this point in time, my group is in a state of panic. It seems that we have not done very much and we are in doubt that we will be able to complete the whole project in time. However, we've found the cause to this problem. The problem is that there has been some minor miscommunication between the group members in that the roles are not well defined. For example, my role is to be the programmer and designer. I did the main page but realised later that the design is not what my group members had wanted or expected. However, this problem has been rectified by making substantial changes to the main page. ... So we have decided that both of my group members will do the "storyboard" and collect pictures for the sites that they are in charged of and i will be in charged of compiling and writing the webpages

At least we know what we need to do so that our project will be able to proceed on. So, we decided to draw a E-R-Diagram

It will be better if the course has provided the relevant material and lesson in programming.. For some of us has never had any programming background ... I am having fear of not being able to finish the assignment for we lack of the knowledge and most importantly, lack of time to learn from scratch on our own.

I think that the group is more focused now on the tasks at hand rather than wondering around what they can do. I have to say that the coming work in progress presentation (although a bit of a pain :\_) helps a lot in planning and organizing our work.

I'm still struggling and pain with designning the web page. The requirements and functionality i require for my web page is very hard to design. I cannot get what i want for it. I have used Netscape composer and AOL to do it. But, AOL seem worse than the Netscape Composer. They are not user friendly ... NOW, i'm trying to use the Dreamweaver ... It seem very user friendly and easy to use ... However, dreamweaver is just one of the selection. If it cannot serve what i want. I'll struggle again and look for other solution ... Again, it is time consuming. I have to manage the time for myself and other gorup members as they are waiting for my main page fix attributes.

Another problem is the changing requirements from our client. Quite often he will have some new ideas when we talk about the project with him.

In this project we focus on how we work as a group and the process of learning what we don't know rather than just focus on the end product (project). we do our best to solve the problems that raise within the group project, the time schedule of when we can meet again.

We seem to be coping quite well by going off and doing our own jobs, and then combining them when we meet. We are starting to notice that our pages look quite different on Netscape compared to Internet Explorer (IE). I asked one of the group members what they were using to generate the web pages, when i was told it was AOL Press, i knew straight away that the issue had to be addressed. I knew that if we all used different web editors to generate our pages, then it is likely to pose a problem.

Problems we have with with our group member C. We are not sure what to do with him. We are supposed to meet every tuesday but he is not here. Therefore, we cannot assign any work for him to do. I think that if he still does not come next week, we have to do something about him. We will just continue working on our web site regardless of C. If he does not want to work, we will not force him. Anyway, the two of us are going fine working on the web site. I don't see any problems doing the projecvt with two of us.

I got the problem to make the search engibe cgi script. We need to do the search within our webpage data only. so i got no idea how to start that. Maybe we need to take more long time on this stuff.

On the personal level, I realise there was alot of ground that I had to cover as I did not do HTX 511 last semester. However, I am not regretting my decision to take this unit.

Mostly our group is continuing to stumble on time restraints from other subjects. Although we discussed this issue last week and I offered to take a more active role in the generation of HTML pages rather than only the content of each page and the Project Management

## Appendix 7- Week 7 responses

How is the group working together at this point, from your perspective (issues/problems/successes)? How are you personally feeling about the project at the moment? Is anything blocking your

progress? If so, how will you try to overcome it?

Positive responses.

About last week working, it was great. Everyone help each other to finish all the tasks that we have to show in our presentation. we have to present our project in the first week of presentation, therefore it is our busy week.

the project is going on quite well. It is better than when we started the project. We know and learn how to construct the homepage and components in each page. And make it as a standard for other pages.

I think this project is quite useful and helpful, and it is also complicated. This project teach and give me a lot of knowledge. I know how to design web site, know how to use HTML program, know how to use new programs and working with group.

One of our problems is that we often do not agree with each other's opinions and ideas but I think we handled problems well and often are able to come to a consensus. I consider this a success or achievement

I only know a little of what my two other group members are learning. The presentation which we have just done also helps in combining our work together. I think this is the biggest step that we have done so far. While combining the work, we sort of cross-work in the sense that they would be assessing the work I have done, while I give them suggestion on the work they are doing in order to be consistent with the rest.

I have learn a lots through the web page design (dreamweaver) and imaging softwares (editing). It really takes me a long time to do that especially for editing the image. i try not too focus on imaging. Must weight the others tasks as well. I have to make sure our groups is on track.

In this unit, we are not aiming for the end product, instead, we are learning the progress.

we went through the requirements with our client again and put them down on paper

We found that the questions and feedbacks raise in the presentation is very useful, that gives us other's point of view about our project. We can find what are the weaknesses of our design and layout. We are very grateful to be given the chance to recap everything we learnt in the lectures and presented it to rest of the class. By giving feedback to the other group's project, gives us the opportunity to access our own project.

We are working even harder than ever!! We sort of like burnt our weekends, I mean the whole of the weekend. This is because of our steep learning curve or acquiring the new softwares ... I suppose its the learning curve of ourselves in regards to all the software we are using, as its not being taught in this unit.

If I were to do alone - which i don't think so, I probably won't enjoy doing it - Doing as a group is quite fun where problems arises, can be solve immediately or ideas can be generated while we are doing it.

We are currently faced with having to master DreamWeaver, Flash, Photoshop and database designing all at once. It can get rather overwhelming at times. These are, basically, software that some of us (all right, it's me especially) have not even heard of before taking the course. It has taken us quite a bit of time just learning how to use them let alone putting them to good

use. However, we feel that to opt for the easier alternative would have meant that we would be letting go of an excellent opportunity to learn something valuable out of this course and we don't intend to let it slip away ...Whew! That was a most cathartic experience.

I am currently experiencing some forms of frustration with developing a group project based on my expectations of creating an impressive website. During my career I have always strived to achieve outstanding work performance together with a high level of professionalism. I find it difficult to balance working with people without the same values although I realise I can not place my own values or expectations onto them. Instead I will try to redefine their way of thinking by example (i.e. if I can develop a look that appeals to them, yet which still portrays a degree of professionalism, they might start aligning their own contributions to that level).

I cant be a designer BUT the knowledge that I have gained from this unit will allow me to work with designers and clients as I will be able to understand the technical side as well as the business side of Electronic Commerce.

Our group in my perspective is the "dream group" I have been looking for a long time. Unlike some group I once worked with, some of them never bother to turn up for meeting, let alone playing their parts. We each pull our full weight for what ever it takes to fulfill our vision.

I am very thankful when [one of the lecturers] comes along and spoke to us, group, checking our progress, asking question that actually raise a bell saying, 'oh right, we need to do that', or, 'it is a good new idea'

#### Negative responses.

I have to admit I am pretty disappointed at the pace we are going about with our project. Believe it or not, we changed our topic and we would be doing something different, in fact, more interesting and in a way "knowledgeable" from my point of view. One group member was pretty disappointed that the topic has changed but I have to argue that we haven't gotten very far with the original idea in the first place.

I feel pressure about that i'm the only one for doing the webpage design and create the homepage. Because the other group members didnt contribute much about the deleoping the web,so i hope don't put too much expectation for our group projects.

I believe the group members are not communicating as well as we should be. There appears to be certain members spending excess time on developing flash images rather commencing to investigate database integration.

#### The project is late ...

I think we have to improve on making a commitment on this unit. As far as I know we are not progressing on our project as I would like it to be.

Personally I feel that the progress of the project is slow. maybe this is because the time we can actually seat down and discuss is not to much. Sometimes I need to go for working, and sometimes the groupmates might need to go to class or have other assignments to do as well. And sometimes emotional problems can be a barrier for blocking the progress too.

I think this project will be harder than I first imagined but this is mainly due to time contraints and the volume of work/uni I have at the moment.

At this point, our group is not working together very well. We haven't really performed as a

group of three, yet. We have just had a group meeting, in which we have sorted things out with C. We hope he understands what we expect from him now.

My dear undergrad is not producing the quality I'm expecting. So now I'm trying to clean up his shoddy work. I'll be having a little talk with my dear undergraduate and laying out my expectations of the work quality after the presentation. I will also provide the necessary guidance to ensure that the level of output is there. What is our benchmark and how do we benchmark quality?

Motherhood statements.

it is just a matter of getting our act together and really get it going.

Will do my best.

I just hope that our project will finish smoothly.

About the journal.

I kinda like this journal as well, I wish my previous units has something like this, and one thing I really feel good about it is that it is personal, so that I can speak of my problem clearly (luckily I don't have to this time), if some of my other units have this tool, it would really help

I am begining to get a bit sick of this journal exercise. I think perhaps a fortnightly entry may be more "bearable". While it is a good way to keep groups in perspective as it acts a bit like a "reality check" along the way but seriously, do we have to rack our (perhaps deepest, darkest) feelings once a week to "earn" our 20% at the end of the semester? I'd rather spend a week learning a new tool, say, java script or html than reporting about nothing but group dynamics. The first 3 weeks were fine but after that, its a DREADFUL exercise to attempt each week.

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